Intellectual capital

Unleashing our unique abilities that set us apart

Our Company's wealth of knowledge, expertise, innovation capabilities, and proprietary technologies and processes have enabled us to establish a unique position in our industries. During the year, we leveraged these strengths to develop innovative products for a cleaner and greener future. KUKA



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Product development

Our state-of-the-art rubber lab in Duisburg, Germany, will significantly improve our technical services and targeted product development for the rubber industry. In 2022, we also:

- Introduced NOVARES® TM 85 AS and TM 100 AS for use in tyres, coatings, and adhesive applications
- Launched improved formulations of our NOVARES[®]
 Pure series of hydrogenated hydrocarbon resins, which were well received by customers
- Switched to petro-based indene fractions to produce our NOVARES[®] C resins



Developing innovative materials for lithium-ion batteries

We have been developing innovative engineered products used in lithium-ion batteries to meet the growing demand for electromobility. In CY21, we added two new products — PETRORES[®] and LiONCOAT[®] LM — to our line of thermoplastic carbon precursors. These products are used in the production of graphite-based anode materials for lithiumion batteries. In recent years, demand for lithium-ion batteries has been rising due to their vast application in consumer electronics like smartphones, power tools and electric vehicles as well as future uses including energy-storage systems for peak-shaving in renewable energy grids.

In CY23, we will be participating in a publicly funded European Research and Innovation project to increase sustainable production of synthetic graphite anode materials for lithiumion batteries. Through our Competence Centre Precursors & Distillates in Belgium and Competence Centre Carbon Technology in Germany, we will work with 12 other companies and academic centres over 36 months to improve all tiers of the value chain from raw materials to end-use of the battery.

We also aim to strengthen our position as a carbon raw material supplier by meeting the technical requirements for higher purity and a diversified product portfolio for battery materials in the automotive and energy-storage markets. For this, we are identifying alternative raw materials to diversify and secure our supply chain to stay ahead in this fast-growing market. We are also collaborating with batterymaterial producers to expand and innovate our PETRORES[®] and LiONCOAT[®] lines with new specialised products, while exploring new opportunities to increase our market share through strategic investments.



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Digitalisation at RAIN

In 2022, we announced a transition to a digital performance-evaluation system using SAP SuccessFactors. The new system offers several benefits including reduced paperwork and easier access to employee performance-development data. It also allows for transparent tracking of employee development and easy evaluation and processing of agreed personneldevelopment measures. While the evaluation process and criteria remain the same, the digital system streamlines administration for employees, managers, and the HR team.





Advancing our innovation leadership in the resins and modifiers business

With the goal to build a future-ready product portfolio, we developed new pure monomer resins and hydrogenated hydrocarbon resin product series.

In addition to the introduction of the NOVARES® resin products described on page 48 in 2022, our R&D team in Europe discovered that compounding our NOVARES® Pure 1120 and 2120 hydrogenated hydrocarbon resins into high-density polyethylene (HDPE) resulted in increased stiffness and improved gas-barrier properties for air and humidity. These HDPE compounds can serve as a sustainable alternative to polystyrene in consumer goods production.

In addition to product innovation, we made efforts to improve sustainability in our operations. We transitioned our Duisburg plant in Germany from coal tar-based feedstocks to upcycled petroleum-based aromatic industrial byproducts. This was motivated by an expected decrease in the availability of coal tar in Europe and the desire to reduce our carbon footprint. We also switched to petrobased indene fractions to produce our NOVARES® C resins, which improved security of supply and reduced the carbon footprint of downstream products. These efforts demonstrate our commitment to meeting the needs of our customers, while also prioritising environmental stewardship.